GOPHERT

Compact DC Power Supply

CPS Series

User Manual

Safety Regulations

To avoid electrical shock, non-authorized person of our company is not allowed to open the cabinet.

It is forbidden to use this product for life support system or any other devices with high safety requirements.

We are not responsible for any direct or indirect financial damage that might occur when using the power supply.

Warranty

This hardware product is warranted against defects in material and workmanship for a period of two years from date of delivery.

For warranty service, this product must be returned to a service facility designated by our company. Customer shall prepay one-way freight for products returned to our place for warranty service. Our company shall pay for return of products to customer. Customer shall pay all freight, duty and taxes if the product is back from foreign countries for repair.

Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by the customer, customer-supplied software or interfacing, unauthorized

modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation and maintenance, installing circuit by the customer or using their own product, changing, deleting, removing or unrecognizing the product model or serial number, accident including but not limited to lightning stroke, water, fire, misuse or neglect.

WARNING

Do not use this power supply near water.
Do not operate or touch this power supply with wet hands.
Do not open the casing of the power supply when it is connected to ac mains.

CAUTION

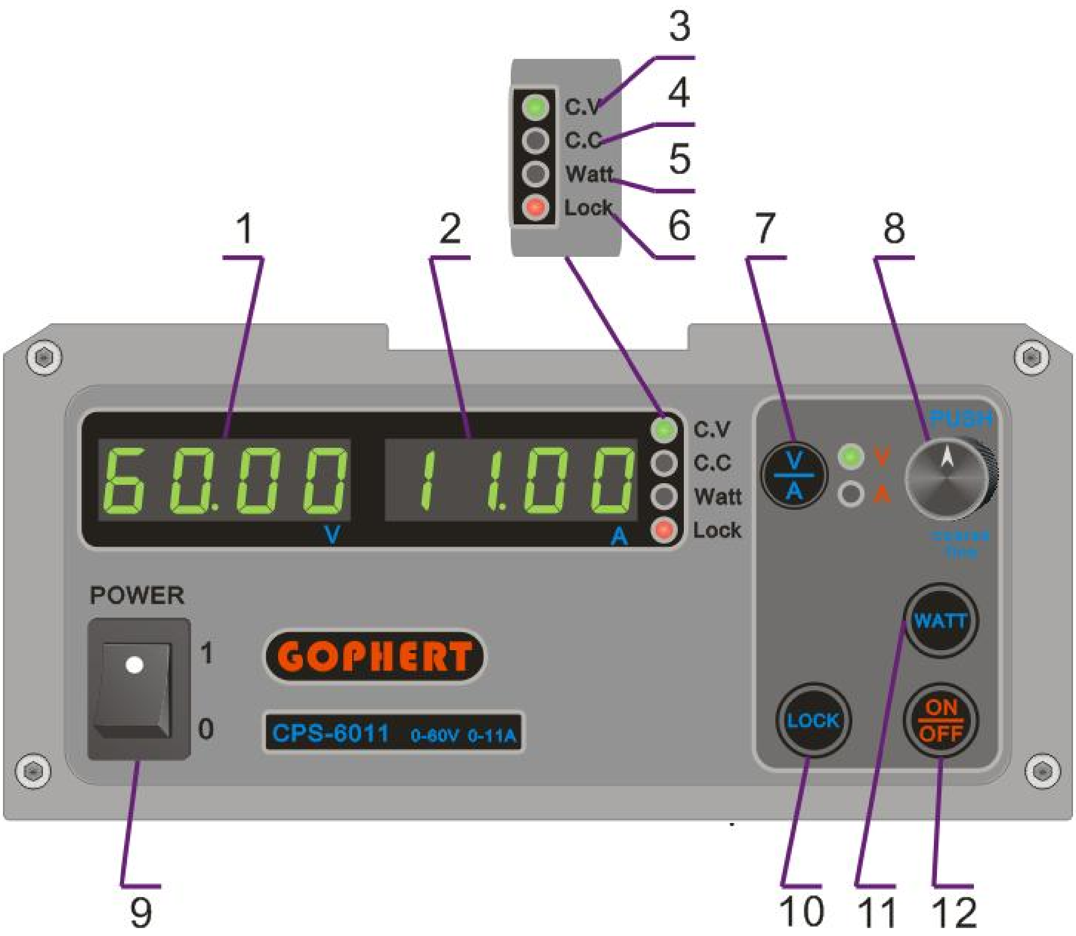
Use a grounded 3 pin AC source.
This unit is for indoor use only.
Do not operate or place this unit in a humid, dusty, in direct sunlight location or near any heat source.
Before plugging into local AC mains, carefully to set the switch according to the AC input Voltage.
Do not block any ventilation openings of the unit.
This unit must be used within the specified rating; regular excessive continuous loading may cause damage to the power supply.

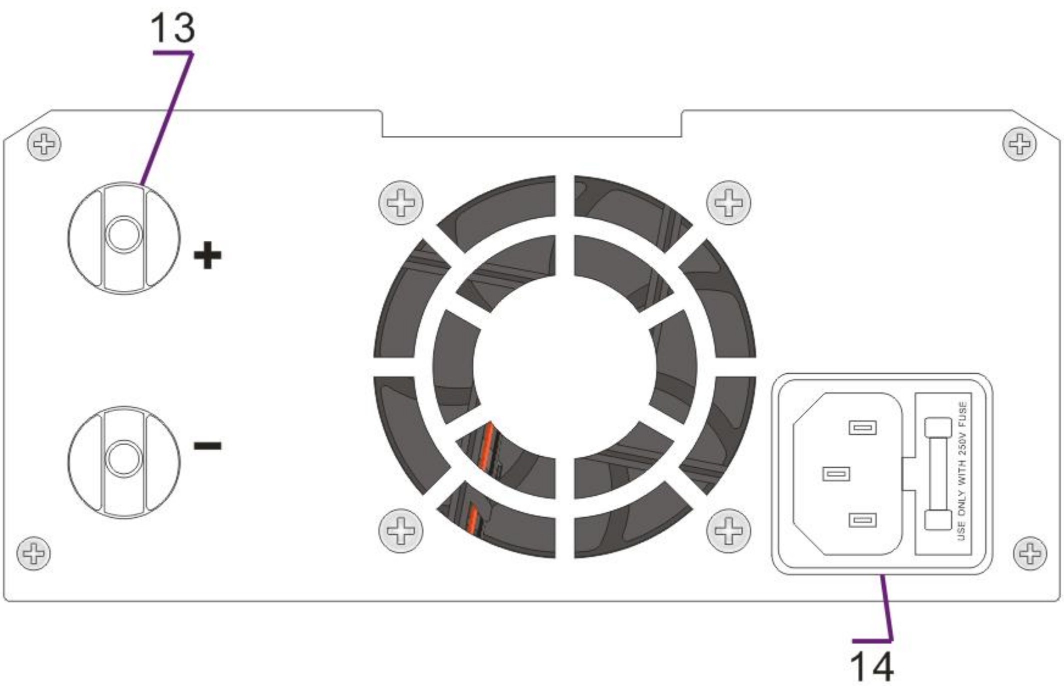
Contents

1 Product Features

- **Top performance cost ratio**
- **High power density, smallest and compact**
- **Full metal enclosure with very low EMI**
- **The microprocessor(MCU) control**
- **Using Encoder to set the voltage and current**
- **Four digital volt meter and current meter**
- **High efficiency, up to 90%.**
- **Low Ripple & Noise: ≤ 30 mVp-p.**
- **Output ON/OFF**
- **Lock switch**
- **Intelligent protection: Tracking OVP, Tracking OCP, OTP, Output short circuit protection**

2 Panel Layout





No.	Name	Shown in diagram or State	Function
1	Volt meter		Display the setting voltage or the actual output voltage
2	Current meter		Display the setting current or the actual output current , output state(OFF，OVP，OCP，OTP)
3	Constant voltage indicator	Turn ON/OFF	Turn ON—Constant voltage state
4	Constant current indicator	Turn ON/OFF	Turn ON—Constant current state
5	Watt indicator	Turn ON/OFF	Display output power
6	LOCK indicator	Turn ON/OFF	Indicate the LOCK state
7	Voltage/Current select button		‘V’ indicator turns on for adjusting voltage
			‘A’ indicator turns on for adjusting current
8	Adjusting Knob		Rotation—increase or decrease
			Push— Coarse/Fine
9	Power Switch		Power ON/OFF
10	LOCK button		Click, lock/unlock. In the lock state(Lock light is on)，adjusting knob and ON/OFF button can’t change output state.
11	WATT Button		Click, digital tube of ammeter highlights the current output power and light is on. Restore the current display automatically after display lasts 5 seconds.
12	ON/OFF button		Click—output on or output off
			Press it for 5 seconds to set the output on at turn on the power supply.
13	Output Terminal		Red—Output ‘+’/ Black—Output ‘-’
14	AC Socket		AC Input Socket

3 Function and Operation

3.1 Select Operation Voltage

Click the adjusting selective button 

to "V" indicator turns on, click the adjusting knob, the volt meter display the set voltage and the adjustable position highlight as fig1, the highlight will shift from right to left when user clicks the knob continually. Then adjust the knob to set the highlight number.

For example: Set the output voltage is 24.15V. At first, click the knob, the rightmost position of the volt meter highlight, adjust the knob to set the highlight number to 5, then click the knob again the highlight will shift to left, adjust the knob to set the highlight number to 1, then set the highlight number to 4 and 2 in the same way, finally the output voltage is set to 24.15V.



fig1

3.2 Set the output current

Click the adjusting selective button 

to "A" indicator turns on, click the knob the Ammeter display the set current, the operation is same as setting voltage.

3.3 Turn on or turn off output

When the output is turned off, the ammeter highlights "OFF"， Click "ON/OFF " button 

the output turned on. Then click the button again the output turned off.

3.4 Set the output on at the AC power on

Press " ON/OFF " button 

for 5 seconds, ammeter highlights " dOn " for 2 seconds, the output is set to on at the AC power on. To cancel this function, press " ON/OFF "button again for 5 seconds, ammeter highlights" dOF " for 2 seconds, The output is off at the AC power on.

3.5 Lock

Click " Lock " button 

, the "Lock" indicator turns on, ON/OFF button and adjusting knob are locked. To cancel the function please click the" Lock "button again and the lock light turns off.

3.6 Display the output power

Click " WATT " button 

, the "Watt" indicator light turns on and ammeter highlights the output power for 3 seconds.

4 Protection

4.1 Over Voltage Protection

MCU controls the tracking OVP, OVP value is relevant to the setting voltage, this function protect the appliance which connected to the power supply safely.

When OVP is triggered, MCU shut down the output and the ammeter highlights " OUP ". Press ON/OFF button to reset the OVP if the over voltage problem has been resolved.

4.2 Over Current Protection

MCU control the tracking OCP, OCP value is relevant to the setting current. This power supply can operate constant current mode, so if the C.C works normally the

OCP never be triggered; However if the C.C works abnormally the tracking OCP will protect the appliance which connected to the power supply safely. When OCP is triggered, MCU shut down the output and ammeter highlights“ OCP ”, press ON/OFF button to reset the OCP if the over current problem has been detected.

4.3 Over temperature protection

The MCU monitor the temperature of the power supply, if the temperature is higher than the special value MCU shut down the output and ammeter highlights “ OTP ” , press ON/OFF button to reset the OTP if the temperature lowered.

5 Application

5.1 Series Connection

Several units can be connected in series in order to gain a higher total output voltage. To do so, the positive DC output of one unit is connected to the negative DC output of the next unit etc. The non-connected positive and negative of the last unit will be the positive and negative of the whole series output, and will have the high voltage output.

- In view of safety and insulation, it is not allowed to connect an arbitrary number of units in series. The DC output of series system must not be raised higher than 500 V DC.
- If units with different nominal current are connected in series, the minimum nominal current of the products is the maximum current of the system.
- In a series connection, only negative DC output of one unit (the one with negative DC output in the series system) may be grounded.5.2 Parallel Connection

Several units which are preferably same type, but at least identical nominal output voltage, can be connected in parallel in order to gain a higher total output voltage. It is recommended to adjust the output current to the maximum and the output voltage to identical value on every unit.

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